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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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THOMAS M. BOYCE, PhD., J.D.
FULBRIGHT & JAWORSKI
600 CONGRESS AVENUE
SUITE 2400
AUSTIN, TX 78701

21
EXAMINER

PRINCE, FRED G

ART UNIT

PAPER NUMBER

1724

DATE MAILED: 09/05/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/446,581

Applicant(s)

ALVAREZ ET AL.

Examiner

Fred Prince

Art Unit

1724

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 June 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-18, 34-37, 42-54 and 56-61 is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

- 5) ☒ Claim(s) 9-12, 34-37, 46-54 and 56-61 is/are allowed.

- 6) ☒ Claim(s) 1-8, 13-15 and 42-45 is/are rejected.

- 7) ☐ Claim(s) 16-18 is/are objected to.

- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.

- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) ☐ All b) ☐ Some * c) ☐ None of:

1. ☐ Certified copies of the priority documents have been received.

2. ☐ Certified copies of the priority documents have been received in Application No. _____.

3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

- 14) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) ☐ The translation of the foreign language provisional application has been received.

- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)

- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____.

- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.

- 5) ☐ Notice of Informal Patent Application (PTO-152)

- 6) ☐ Other:

DETAILED ACTION

1. Applicant's arguments with respect to claims 1-18, 34-37, and 42-45 have been considered but are moot in view of the new ground(s) of rejection necessitated by applicant's amendment.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1-3, 5-6, and 13-15 are rejected under 35 U.S.C. 102(b) as being anticipated by Belay et al. (reference C3 on IDS).

Belay et al., teach a device comprising zero-valent iron and an autotrophic, hydrogenotrophic bacteria, including *Methanosarcina barkeri* (page 2) in a culture medium in a tube (bottom of page 4) under anaerobic conditions, wherein the tube inherently comprises an inlet port/outlet port to receive and output the content of the tube.

4. Claims 42-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Hunter et al.

Hunter et al. teach a method of remediating the specified halocarbons in situ (col. 7, lines 51-55; col. 8, lines 1-16) by contacting a site with a device (12).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over Belay et al. in view of Semp et al.

Belay et al. is described above. Belay et al. do not disclose using one of the recited bacteria.

Semp et al. disclose using one of the recited bacteria in order to remove undesirable matter from the water (col. 4, lines 60-68).

It would have been obvious for the skilled artisan to have modified the device of Belay et al. by using one of the recited bacteria in order to remove undesirable matter from the water, as suggested by Belay et al.

7. Claims 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Belay et al.

Belay et al. is described above. On a different embodiment of the invention, Belay et al. also disclose providing a glass support (Fig. 3, page 3) in order to support bacteria.

It would have for the skilled artisan to have modified the device of Belay et al. to include a support in order to support bacteria, as suggested by Belay et al.

Response to Arguments

8. Applicant's arguments filed June 20, 2003 have been fully considered but they are not persuasive.

Applicant argues that Belay et al. do not teach bacteria and metal in contact. However, Belay et al. clearly teach bacteria and metal in contact in the serum tube (page 4).

Allowable Subject Matter

9. Claims 9-12, 34-37, 46-54, and 56-61^{are} allowed.

10. Claims 16-18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

11. The following is a statement of reasons for the indication of allowable subject matter:

Per claims 9 and 18, in the examiner's opinion, the prior art fails to teach or fairly suggest providing the device within an environmental site. Belay et al. (reference C3 in

IDS) does not provide the serum tube in a site. Providing the device in a site has the advantage of avoiding transporting the material to be remediated to a different location.

Per claims 16-17, in the examiner's opinion, the prior art fails to teach or fairly suggest providing the device within a water treatment system, a municipal water supply system or pollution decontamination system. Belay et al. (reference C3 in IDS) does not provide the serum tube in a water treatment system, a municipal water supply system or pollution decontamination system. Providing the device in one of the recited systems has the advantage of avoiding transporting the material to be remediated to a different location.

Per claim 34, in the examiner's opinion, the prior art fails to teach or fairly suggest a method of treating compounds in an environmental site including contacting the site with a device including hydrogenotrophic bacteria and zero-valent iron. Belay et al. (reference C3 in IDS) does not provide the serum tube in an environmental site. Providing the device in a site has the advantage of avoiding transporting the material to be remediated to a different location.

Per claim 59, in the examiner's opinion, while it is known in the art to treat nitroaromatic compounds with hydrogenotrophic bacteria, the prior art fails to teach or fairly suggest a method of treating nitroaromatic compounds with a culture medium including zero-valent iron. The bacteria and iron create favorable biochemical conditions that facilitate degradation of the nitroaromatic compounds.

Conclusion

12. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References are cited of interest to show the state of the art.
13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Fred Prince whose telephone number is (703) 306-9169. The examiner can normally be reached on Monday-Thursday, 6:30-4:00; alt. Fridays 6:30-3:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Blaine R. Copenheaver can be reached on (703) 308-1261. The fax phone

Art Unit: 1724

number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0661.

Fred G. Prince
FRED G. PRINCE
PRIMARY EXAMINER
9/2/03